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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Todd T. Taylor  
TAYLOR & AUST, P.C.  
142 S. Main St.  
P.O. Box 560  
Avilla, IN 46710

EXAMINER

HUG, ERIC J

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/074,551

Applicant(s)

GRABSCHEID ET AL.

Examiner

Eric Hug

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Response to Arguments***

In view of the arguments filed on October 14, 2003, PROSECUTION IS HEREBY REOPENED for reasons set forth below.

Applicant's arguments, particularly the emphasized passages on pages 8-11, filed October 14, 2003, with respect to claim 1 have been fully considered and are persuasive. The rejection of claims 1-24 under 35 U.S.C. 103(a) as being unpatentable over EP 0 627 523 in view of Buck et al (US 5,389,206), and if necessary further in view of Braun et al (US 5,225,043) or Farrington et al (US 5,129,988) has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the references cited below.

With respect to the arguments, the examiner recognizes that EP 0 627 523 discloses a twin wire paper machine having a non-suction forming roll followed by dewatering devices that do not include a forming suction box and oppositely-disposed forming strips positioned immediately after the forming roll. The examiner also recognizes that Buck discloses a twin wire having a suction forming roll followed by non-suction dewatering devices. Any combination of features disclosed by these two references do not read on the claimed twin wire former of the present invention.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaakkola et al (US 5,759,353) in view of Heikki et al (EP 0 627 523) and Farrington et al (US 5,129,988). Jaakkola discloses twin wire paper machine having top and bottom wire, headbox with headbox nozzle, and a hollow-faced (open) rotating forming roll (11, 11') without suction. In Figure 1, immediately after the forming roll are a spring blade loading unit (50) opposite a forming rib unit (30). The forming rib unit comprises a forming shoe (22) with ribbed deck (22a) and an applied vacuum (column 5, lines 40-43). Therefore, there is a forming suction box located immediately after the forming roll, the forming suction box being the combination of the forming shoe and vacuum. There is also a plurality of forming strips opposite this forming suction box, the forming strips being the spring blades. Absent any further description of the suction box and forming strips of the claims, the rib unit and spring blade unit of Jaakkola read on these claimed features.

With respect to the wrap angle, it appears from Figure 1 that this forming roll has a wrap angle of less than 7 degrees. In the vertical arrangement of Figure 7, the wrap angle is specified as being 5-45 degrees (column 7, line 35), therefore it is reasonable to expect the wrap angle of Figure 1 to be less than 7 degrees. Furthermore, the wrap angle of twin wires about a forming roll is well known to one skilled in the art to be a result effective variable that controls the amount of initial dewatering of the formed web. Therefore, even if Jaakkola does not strongly

suggest that the wrap angle is less than 7 degrees, it is clear that the wrap angle is small, and optimization of the wrap angle with respect to desired amount of initial dewatering would have been prima facie obvious, *In re Boesch*, 205 USPQ 215 (CCPA 1980) (the discovery of an optimum value of a known result effective variable without producing any new or unexpected results is within the skill of the routineer in the art). The same can be said about the diameter of the forming roll, as optimization of the forming roll diameter with respect to desired amount of initial dewatering would have been prima facie obvious, *In re Boesch*, 205 USPQ 215 (CCPA 1980). If necessary, EP 0 627 523 is cited here to exemplify that open forming rolls having diameter less than 1.4 mm is well known in the art (see page 4, lines 35-36, that the diameter of the forming roll may be from .5 to 1.5 meters). With respect to the other elements of claim 1, there is clearly shown a wedge shaped inlet nip as claimed. There is also clearly shown a central area with a plurality of dewatering elements and forming elements (suction boxes and flexibly mounted forming strips followed by other dewatering devices). Furthermore, the apparatus is inherently capable of being operated at any stock consistency and therefore this is not a structural limitation on the former. Nevertheless, the claimed stock consistency is typical of what is practiced in the papermaking art, as exemplified by Heikki on page 6 which teaches that the consistency is .5-1.7% coming from the headbox, which overlaps the claimed range of .4-2%.

All other features of the dependent claims are shown or suggested by Jaakkola or Heikki or Farrington, and/or are obvious features as described in previous office actions and restated below:

With respect to claims 2 and 3, Jaakkola clearly teaches that the forming roll may be an open forming roll having a hollow face. An open forming roll is known to have alternatively either a honeycomb open surface, or a grooved, or drilled, or bored surface. With respect to claims 4, 6, 9, 13, and 14, both Jaakkola and Heikki show additional suction elements well downstream of the initial forming elements. With respect to claim 5, the consistency has been addressed above. With respect to claims 7 and 8, note that Heikki explicitly teaches that the radius of a forming suction box may be from 2-8 meters and the radius of a forming suction box may be 3-8 meters (see page 4, lines 48-50; page 5, lines 13-15). With respect to claims 10-12, the strips (spring blades) can be flexibly mounted or stationary mounted with a pressure loading unit. With respect to claims 15, 16, 18-22, and 24, these well known features are all exemplified in the Figures of Jaakkola and/or Heikki. With respect to claims 23 and 24, Jaakkola uses a transfer suction flatbox and Heikki uses a transfer suction roll.

With respect to claim 17, Farrington is cited to exemplify the well known use of machine wide separating elements/dividers in a headbox that feeds stock to a twin wire former. At the time of the invention, it would have been obvious to one skilled in the art to have used separating elements in the headbox of Jaakkola for the known advantages of dividing the flow into layers.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Bubik et al (US 5,259,929) discloses in Figure 3 a twin wire former having an open forming roll (16') about which two forming wires are joined through a predetermined wrap angle, and immediately following the forming roll are forming shoes (28) and positioned oppositely of the forming shoes are forming ledges (30), each having water removal means.

Bubik et al (US 5,282,933) discloses in Figure 4 a twin wire former having an open forming roll (1), and immediately following the forming roll are oppositely positioned suction boxes (2, 3), which may comprise transverse ledges.

Kraft (US 5,300,196) discloses a twin wire former having a forming roll with water removal ledges 7 positioned immediately thereafter, and positioned oppositely from ledges 7 are ledges 25 and suction units 27 and 28.

Kotitschke (US 5,914,009) discloses in Figures 3 and 4 a twin wire former having a suction forming roll, and immediately following the forming roll are a suction box with rigid slats and oppositely positioned flexible slats.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.

  
jeh

  
STEVEN P. GRIFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700